

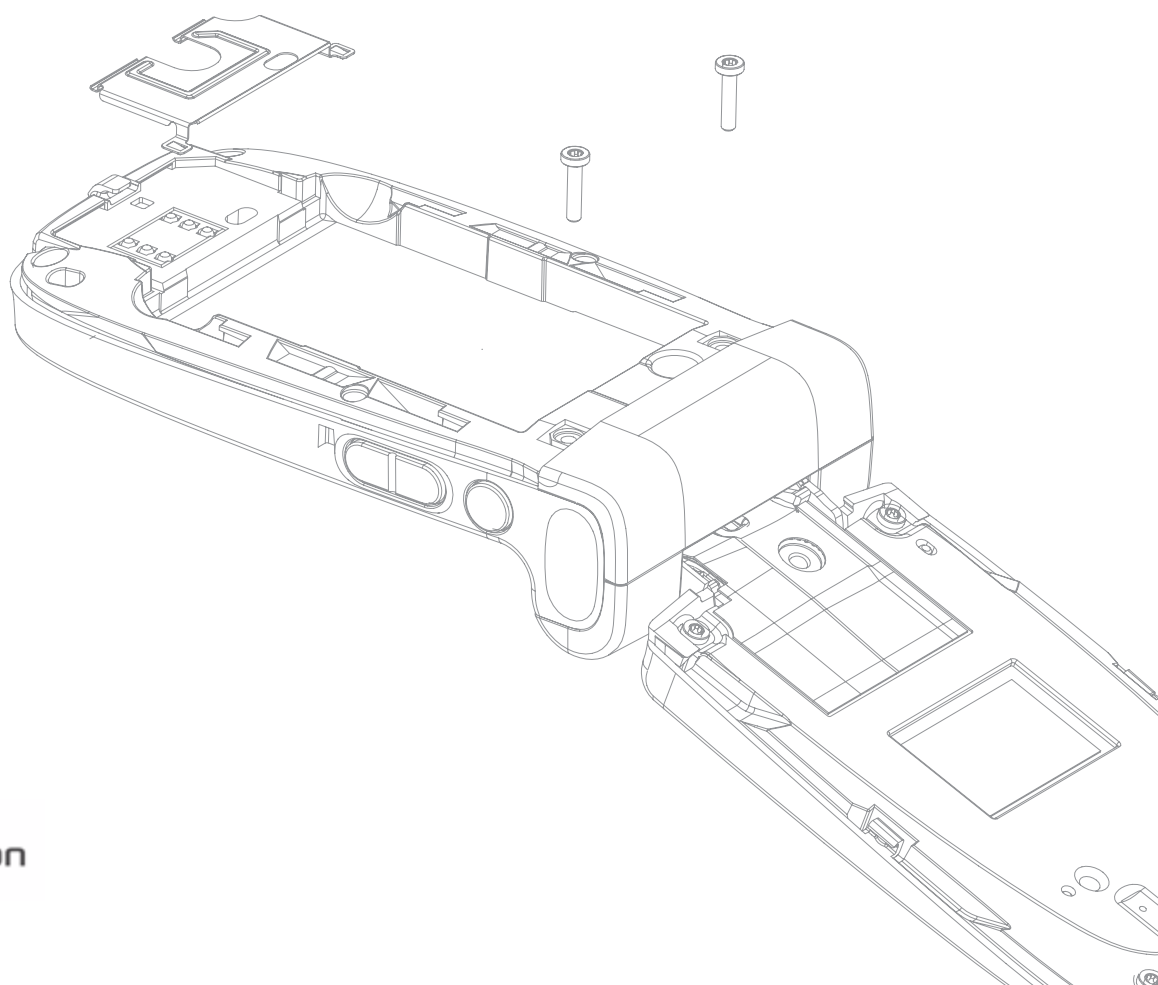
Product information

DEVELOPER
WORLD THE FAST
TRACK FROM
MIND TO MARKET

May 2008

Project Capuchin

Bridging Flash Lite and Java ME in Sony Ericsson phones



Sony Ericsson

Document history

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Overview

Sony Ericsson is well known for its extensive adoption and implementation of quite a number of Java API (Application Programming Interfaces) in its phones. These functionalities enable Java™ Platform, Micro Edition (Java ME) developers to utilise the platform benefits and develop feature-rich applications for Sony Ericsson phones. However, the Java ME platform offers limited possibilities when it comes to user interface design. Lack of standardised graphic tools makes creation of compelling user interfaces time consuming and costly.

Most newer Sony Ericsson phones have a built-in Adobe™ Flash Lite™ player, allowing rendering of Flash Lite content in the phones. Flash Lite animations are normally created with highly standardised and intuitive tools, such as Adobe Flash CS3, primarily directed towards designers. Using ActionScript™, a Flash specific scripting language, Flash Lite content can interact with some services available in the phone. Compared to Java ME, ActionScript access to the phone service layer is very limited and much less efficient.

Project Capuchin has been developed by Sony Ericsson to create a bridge between Java ME and Flash Lite, making it possible to use Flash tools for user interface design while still having access to all phone services available to Java ME.

What is Project Capuchin?

Project Capuchin is a Java API defining a bridge between Java ME and Adobe Flash Lite technologies. This API make it possible to use Flash Lite as the front end and Java ME as the back end of applications.

Project Capuchin is the base for great looking applications where the UI presentation is designed in Flash Lite while the data logic is provided by Java code. Data transmission is enabled both ways, from Java ME to Flash Lite and from Flash Lite to Java ME.

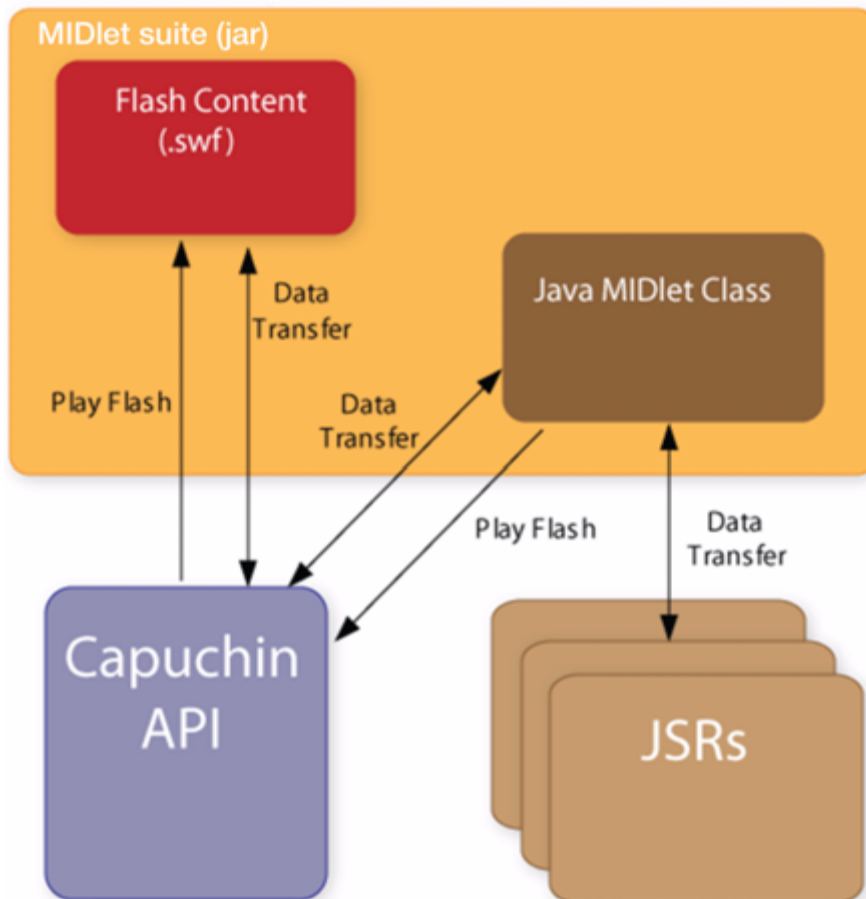
Project Capuchin enables faster UI development and easier collaboration between graphical designers and code developers. Once all interfaces between the presentation and service layers have been defined, UI designers can develop and test the presentation layer in the Flash environment independent of the Java development and testing of the service layer.

Project Capuchin makes all services available to Java ME also available to Flash, by extending the ActionScript API in a structured manner.

Project Capuchin improves Flash Lite content security, distribution and installation by embedding Flash Lite content as a resource in MIDlet suites (.jar).

Architecture

Project Capuchin model



The Project Capuchin API defines several different classes that can be used for developing Java MIDlets, for example, classes to communicate directly with the native Flash player in the phone, classes to play Flash content in a Java Canvas object, and classes for data transfer.

The Flash file (.swf) is included in the MIDlet jar and is started from the Java MIDlet via a call to the Project Capuchin API which invokes the Flash content.

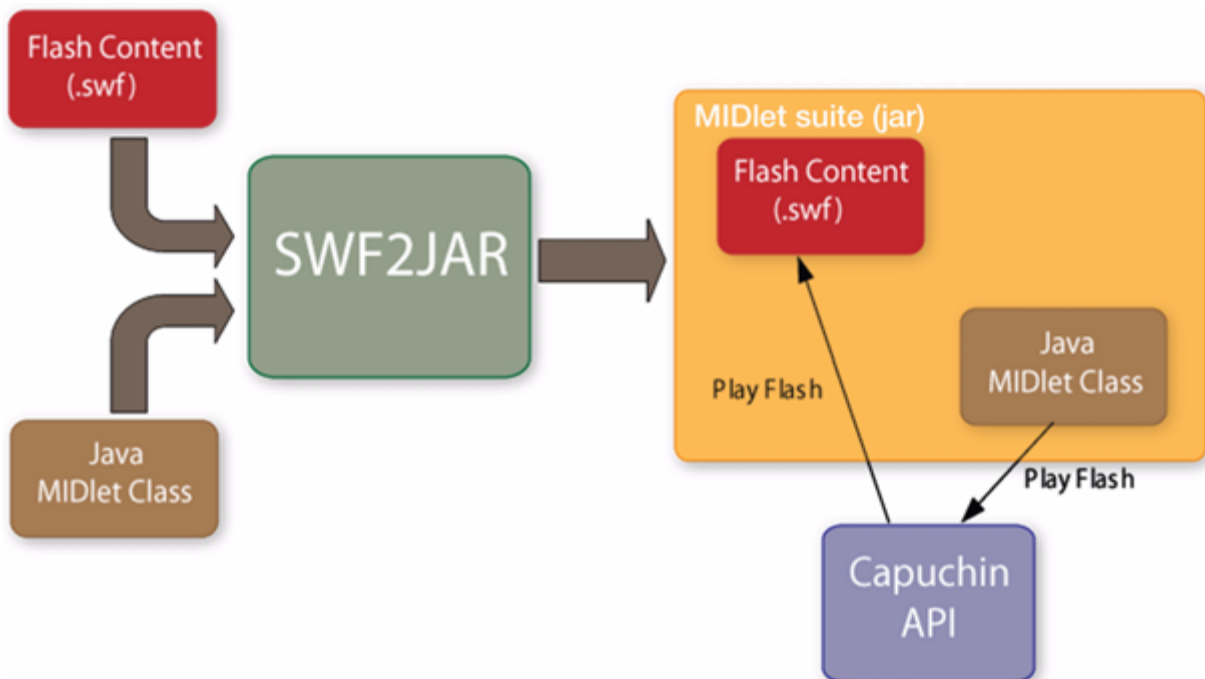
Data transfer interfaces and corresponding classes and function calls should be defined before starting development of the actual Flash and Java applications.

There are two types of data transmission methods:

- Data requests where the MIDlet handles a request of data from the Flash application, and returns data asynchronously. To handle the request, the MIDlet may use any of the JSRs available on the Java Platform in the phone.
- Flash content receives events triggered by the MIDlet.

The SWF2JAR packager

The simplest Project Capuchin application is to package existing Flash Lite content in a MIDlet jar file which applies Java security, distribution methods and installation to the content. For this end Sony Ericsson has created a separate tool called SWF2JAR.



The tool automatically puts together a jar containing the Java MIDlet class and the Flash content.

Additional information

The Project Capuchin API will first be implemented in phone models available on the market during the second half of 2008.

More information about Project Capuchin and SWF2JAR, together with programming reference, code samples, downloads, and so on, will be published on [Sony Ericsson Developer World](#), shortly after public announcement of the first phone supporting the Project Capuchin technology.

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